

**A b s t r a c t**

To refill service-brake circuits (26, 28) after rapid compressed air consumption, wherein the service-brake circuits are compressed air load circuits of a consumer part (6) of a compressed air system for motor vehicles, which system is additionally provided with at least one further compressed air load circuit with compressed air reservoir, the actual values of pressure in the service-brake circuits and the further compressed air load circuits (30, 32, 34, 36) are continuously determined and compared with a lower threshold value. If the results are below the threshold value, the service-brake circuits detected as defective are shut off and communication is established between the further compressed air load circuits with compressed air reservoir and the intact service-brake circuits in order to refill these service-brake circuits from the compressed air reservoirs of the least one further compressed air circuit.